December 27, 2001

Mary King
Micronutrients, Division of Heritage Technologies, LLC
1550 Research Way
Indianapolis, IN 46231

Re: Exempt Construction and Operation Status,
**E 097-15263-00417**

Dear Ms. King:

The application from Micronutrients, received on November 29, 2001, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.1, it has been determined that the following, to be located at 1550 Research Way, Indianapolis, Indiana 46231 is classified as exempt from air pollution permit requirements:

(a) One (1) Hurst natural gas fired boiler rated at 8.4 million Btu per hour identified as emissions unit ID HB-1 exhausting at stack/vent ID B-1. Installed in 1998.

(b) One (1) Hurst natural gas fired boiler rated at 12.6 million Btu per hour identified as emissions unit ID HB-2 exhausting at stack/vent ID B-2. Installed in November 2001.

The following conditions shall be applicable:

1. The 300 HP natural gas fired boiler, identified as emission unit ID HB-2, is subject to the New Source Performance Standard, 40 CFR 60.40, Subpart Dc and 326 IAC 12 because it was constructed after 1989 and has a maximum design heat input capacity greater than 2.9 megawatts (MW) (10 million Btu/hr), but less than 29 MW (100 million Btu/hr).

    (a) Pursuant to 40 CFR 60.48c(a), the owner or operator of this source shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by 40 CFR 60.7.

    (b) Pursuant to 40 CFR 60.48c(g), the owner or operator of this source shall record and maintain records of the amounts of natural gas combusted during each day and retain a record for a period of two years following the date of such record.

2. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

    (a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

    (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuos opacity monitor in a six (6) hour period.

3. Pursuant to 326 IAC 6-2-4 (Particulate Matter Limitations for Sources of Indirect Heating), particulate matter emissions from the boiler Emission Unit ID HB-1shall not exceed 0.6 pounds of particulate

matter emitted per million Btu (lb/MMBtu). Particulate matter emissions from the boiler Emission Unit ID HB-2 shall not exceed 0.49 lb/MMBtu.

This exemption is the first air approval issued to this source. The source may operate according to 326 IAC 2-5.1-1.

An application or notification shall be submitted in accordance with 326 IAC 2 to the OES and IDEM, Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source. If you have any questions, please contact Nikki Olsen at 327-2182.

Sincerely,

Original Signed by Pinkie Evans-Curry
Pinkie Evans-Curry
Acting Administrator
Office of Environmental Services

NJO

cc: file
Mindy Hahn, IDEM

# Indiana Department of Environmental Management
# Office of Air Quality
# and
# City of Indianapolis
# Indianapolis Office of Environmental Services

## Technical Support Document (TSD) for New Source Construction and Operation Exemption

**Source Background and Description**

**Source Name:** Micronutrients, , Division of Heritage Technologies, LLC
**Source Location:** 1550 Research Way, Indianapolis, IN 46231
**County:** Marion
**SIC Code:** 2819
**Operation Permit No.:** 097-15263-00417
**Permit Reviewer:** N. Olsen

The Office of Air Quality (OAQ) has reviewed an application from Micronutrients relating to the construction and operation of the following facilities/units:

(a) One (1) Hurst natural gas fired boiler rated at 8.4 million Btu per hour identified as emissions unit ID HB-1 exhausting at stack/vent ID B-1. Installed in 1998.

(b) One (1) Hurst natural gas fired boiler rated at 12.6 million Btu per hour identified as emissions unit ID HB-2 exhausting at stack/vent ID B-2. Installed in November 2001.

**Existing Approvals**

There are no previous approvals existing for this source.

**Stack Summary**

| Stack ID | Operation | Height (feet) | Diameter (feet) | Flow Rate (acfm) | Temperature ($^0$F) |
|---|---|---|---|---|---|
| B-1 | Boiler Stack | 35 | 15.75 | 1400 | 475 |
| B-2 | Boiler Stack | 35 | 19.75 | 2100 | 475 |

**Enforcement Issue**

There are no enforcement actions pending.

**Recommendation**

The staff recommends to the Administrator that the construction and operation be approved. This

recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application submitted by the applicant.

A complete application for the purposes of this review was received on November 29, 2001.

**Emission Calculations**

See Appendix A, page 1 of 1, of this document for detailed emissions calculations.

**Potential To Emit**

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

| Pollutant | Potential To Emit (tons/year) |
|---|---|
| PM | 1.3 |
| PM-10 | 1.3 |
| $SO_2$ | 0.1 |
| VOC | 0.5 |
| CO | 7.7 |
| $NO_x$ | 9.2 |

| HAP's | Potential To Emit (tons/year) |
|---|---|
| Single | Less than 1 (tpy) |
| Combined | Less than 2.5 (tpy) |

(a) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

(b) 326 IAC 2-1.1-3(d) specifically exempts registering or permitting sources who have potential to emit PM and/or PM10 of less than 5 tons per year, less than 10 tons per year of $NO_x$, VOC and $SO_2$ and less than 25 tons per year of CO. As a result, this source should be exempt from any Registration or Permitting requirements under 326 IAC 2.

**County Attainment Status**

The source is located in Marion County.

| Pollutant | Status |
|---|---|
| PM-10 | unclassifiable |
| $SO_2$ | maintenance |
| $NO_2$ | attainment |
| Ozone | maintenance |
| CO | attainment |
| Lead | unclassifiable |

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Marion County has been designated as attainment for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Marion County has been classified as attainment for all criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

**Source Status**

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

| Pollutant | Emissions (ton/yr) |
|---|---|
| PM | 1.3 |
| PM10 | 1.3 |
| $SO_2$ | 0.1 |
| VOC | 0.5 |
| CO | 7.7 |
| $NO_x$ | 9.2 |

This new source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

**Part 70 Permit Determination**

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than 100 tons per year,
(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
(c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

**Federal Rule Applicability**

(a) The 300 HP natural gas fired boiler, identified as emission unit ID HB-2, is subject to the New Source Performance Standard, 40 CFR 60.40, Subpart Dc and 326 IAC 12 because it was constructed after 1989 and has a maximum design heat input capacity greater than 2.9 megawatts (MW) (10 million Btu/hr), but less than 29 MW (100 million Btu/hr).

(1) Pursuant to 40 CFR 60.48c(a), the owner or operator of this source shall submit notification of the date of construction or reconstruction, anticipated startup, and actual stuartup, as provided by 40 CFR 60.7.

(2) Pursuant to 40 CFR 60.48c(g), the owner or operator of this source shall record and maintain records of the amounts of each fuel combusted during each day and retain a record for a period of two years following the date of such record.

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR 63 and 326 IAC 14) applicable to this source.

**State Rule Applicability - Entire Source**

326 IAC 1-6 (Preventive Maintenance Plan)

The source is not subject to 326 IAC 1-6 because the source is not required to obtain a permit under 326 IAC 2.

326 IAC 2-4.1 (Hazardous Air Pollutants)

The source is not subject to 326 IAC 2-4.1 because the source is not a major source of hazardous air pollutants, as defined in 40 CFR 63.

326 IAC 2-6 (Emission Reporting)

The source is located in Marion County and the potential to emit any regulated pollutant is less than ten (10*)* tons per year. The source is not one of the twenty-eight (28) listed sources and its potential to emit PM10 is less than one-hundred (100) tons per year including fugitive emissions, therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of thirty percent (30%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

**State Rule Applicability - Individual Facilities**

326 IAC 6-2-4 (Particulate Matter Limitations for Sources of Indirect Heating)

Boilers emission units ID HB-1 and HB-2 are subject to the provisions of 326 IAC 6-2-1(d) because they are located in Marion County and were constructed after September 21, 1983. Emission limitations for facilities specified in 326 IAC 6-2-1(d) shall be limited by the following equation:

$$P_t = \frac{1.09}{Q^{0.26}}$$

Where: $P_t$ = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used.

When units are installed at different times, the rule applies to each unit separately.

For the boiler EU ID HB-1, 8.4 MMBtu/hr heat input capacity, installed in 1998,

$$P_t = \frac{1.09}{Q^{0.26}} = 1.09/(8.4)^{0.26} = 0.626.$$

For boilers with heat input capacity less than 10 MMBtu/hr Pt shall not exceed 0.6 lb/MMBtu.

For the boiler EU ID HB-2, 12.6 MMBtu/hr heat input capacity, installed in 2001, the total source maximum heat input capacity is Q = 21.0 MMBtu/hr.

$$P_t = \frac{1.09}{Q^{0.26}} = 1.09/(21)^{0.26} = 0.494.$$

Particulate matter emissions from the boiler EU ID HB-1 shall not exceed 0.6 pounds per million BTU; particulate matter emissions from the boiler EU ID HB-2 shall not exceed 0.49 pounds per million BTU.

326 IAC 7-1 (Sulfur Dioxide Emission Limitations)

This rule does not apply to this source because the potential to emit of each individual unit is less than 25 tons per year or 10 pounds per hour of Sulfur Dioxide.

**Conclusion**

The operation of the existing Hurst natural gas fired boiler rated at 8.4 million Btu per hour, emission unit ID HB-1, and the new Hurst natural gas fired boiler rated at 12.6 million Btu per hour, emission unit ID HB-2, shall be exempt from air pollution control permit requirements.

**Appendix A: Emission Calculations**
**Natural Gas Combustion Only**

**Company Name:** **Micronutrients, Division of Heritage Technologies, LLC**
**Address City IN Zip:** **1550 Research Way, Indianapolis, IN 46231**
**Exemption:** **097-15263-00417**
**Plt ID:** **097-00417**
**Reviewer:** **N. Olsen**
**Date:** **12/27/01**

| **Heat Input Capacity** | **(MMBtu/hr)** | **Natural Gas Potential Throughput (MMCF/yr)** |
|---|---|---|
| EU ID HB-1 | 8.4 | |
| EU ID HB-2 | 12.6 | |
| TOTAL | 21.0 | 184.0 |

| | Pollutant | | | | | |
|---|---|---|---|---|---|---|
| | PM | PM10 | SO2 | NOx | VOC | CO |
| Emission Factor in lb/MMCF | 13.7 | 13.7 | 0.6 | 100.0 | 5.3 | 84.0 |
| Potential Emission in tons/yr | 1.3 | 1.3 | 0.1 | 9.2 | 0.5 | 7.7 |

**Methodology**

MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors for NOx: uncontrolled = 100, Low Nox Burner = 17, Flue gas recirculation = 36
Emission Factors for CO: uncontrolled = 21, Low NOx Burner = 27, Flue gas recirculation = ND
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-03-006-03
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton